CLAIMS

What is claimed is:

1   1.   A method comprising:

2   decoding a first slice of a first frame of a video; and

3   decoding a second slice of a second frame of the video in parallel with said

4   decoding of the first slice of the first frame of the video, at least in part.

1   2.   The method of claim 1, wherein said decoding of the first slice comprises

2   determining whether the first slice has any decoding dependency on having one or

3   more other slices decoded first.

1   3.   The method of claim 2, wherein said decoding of the first slice further comprises

2   determining whether the one or more other slices on which decoding of the first slice

3   depends have been decoded, if the first slice is determined to be dependent on having

4   one or more other slices decoded first.

1   4.   The method of claim 3, wherein said decoding of the first slice further comprises

2   temporarily suspending decoding the first slice if the first slice is determined to be

3   dependent on having one or more other slices decoded first, and at least one of the one

4   or more other slices has not been decoded.

1   5.   The method of claim 3, wherein said decoding of the first slice further comprises

2   decoding the first slice when all of said one or more other slices on which decoding of

3   the first slice depends have been decoded.

1   6.   The method of claim 2, wherein said decoding of the first slice further comprises

2   decoding the first slice on determining that the first slice has no decoding dependency.

1   7.   The method of claim 1, wherein the first and the second frame are one of the

2   same frame.

1   8.   A method comprising:

2   retrieving a slice of a frame of a video;

3   determining whether the slice has any decoding dependency on having one or

4   more other slices decoded first;

5   further determining whether the one or more other slices on which decoding of

6   the slice depends have been decoded, if the slice is determined to be dependent on

7   having one or more other slices decoded first; and

8   temporarily suspending decoding the slice if the slice is determined to be

9   dependent on having one or more other slices decoded first, and at least one of the one

10 or more other slices has not been decoded.

1   9.   The method of claim 8, wherein the method further comprises decoding the slice

2   when all of said one or more other slices on which decoding of the slice depends, have

3   been decoded.

1   10.   The method of claim 8, wherein the method further comprises decoding the slice

2   on determining that the slice has no decoding dependency.

1   11.   An article of manufacture comprising:

2   storage medium; and

3   a plurality of programming instructions stored on said storage medium, the

4   programming instructions designed to enable an apparatus to

5   decode a first slice of a first frame of a video, and

6   decode a second slice of a second frame of the video in parallel with said

7   decoding of the first slice of the first frame of the video, at least in part.

1   12.   The article of claim 11, wherein said decoding of the first slice comprises:

2   determining whether the first slice has any decoding dependency on having one

3   or more other slices decoded first;

4   further determining whether the one or more other slices on which decoding of

5   the first slice depends have been decoded, if the first slice is determined to be

6   dependent on having one or more other slices decoded first; and

7   temporarily suspending decoding the first slice if the first slice is determined to be

8   dependent on having one or more other slices decoded first, and at least one of the one

9   or more other slices has not been decoded.

1   13.   The article of claim 12, wherein the programming instructions are further

2   designed to enable the apparatus to decode the first slice when all of said one or more

3   other slices on which decoding of the first slice depends, have been decoded.

1   14.   The article of claim 12, wherein the programming instructions are further

2   designed to enable the apparatus to decode the first slice on determining that the first

3   slice has no decoding dependency.

1   15.   An apparatus comprising:

2   a buffer to store frames of a video;

- 16 -

3   a first decoding unit coupled to the buffer to decode a first slice of a first frame of

4 the video; and

5   a second decoding unit to decode a second slice of a second frame of the video

6 in parallel with said first decoding unit decoding the first slice of the first frame of the

7 video, at least in part.

1 16. The apparatus of claim 15, wherein said first decoding unit comprises logic to

2 determine whether the first slice has any decoding dependency on having one or more

3 other slices decoded first.

1 17. The apparatus of claim 16, wherein said first decoding unit further comprises

2 logic to determine whether the one or more other slices on which decoding of the first

3 slice depends have been decoded, if the first slice is determined to be dependent on

4 having one or more other slices decoded first.

1 18. The apparatus of claim 17, wherein said first decoding unit further comprises

2 logic to temporarily suspend decoding the first slice if the first slice is determined to be

3 dependent on having one or more other slices decoded first, and at least one of the one

4 or more other slices has not been decoded.

1 19. The apparatus of claim 18, wherein said first decoding further comprises logic to

2 decode the first slice when all of said one or more other slices on which decoding of the

3 first slice depends have been decoded.

1 20. The apparatus of claim 16, wherein said first decoding further comprises logic to

2 decode the first slice on determining that the first slice has no decoding dependency.

1   21.   The apparatus of claim 15, wherein the apparatus is an ASIC comprising said

2   first and second decoding units.

1   22.   The apparatus of claim 15, wherein the apparatus is a circuit board comprising

2   an ASIC having at least one of said first and second decoding units.

1   23.   The apparatus of claim 22, wherein the apparatus is a selected one of a palm

2   sized computing device, a wireless mobile phone, a digital personal assistant, a set-top

3   box, a digital versatile disk player, a television, and a display monitor.

1   24.   The apparatus of claim 15, wherein

2   the first and second decoding units comprise first and second threads of

3   programming instructions designed to perform said first and second decoding

4   respectively; and

5   the apparatus further comprises one or more memory units to store the

6   programming instructions, and at least one processor coupled to the one or more

7   memory units to execute the first and second threads of programming instructions.

1   25.   The apparatus of claim 24, wherein the apparatus is a selected one of a palm

2   sized computing device, a wireless mobile phone, a digital personal assistant, a laptop

3   computing device, a desktop computing device, a set-top box, a server, a digital

4   versatile disk player, a television, and a display monitor.

1   26.   A system comprising:

2   a video provider to provide an encoded video; and

- 18 -

3   a video renderer coupled to the video provider to receive the encoded video,

4   decode the received video, and render the decoded video, including

5   a first decoding unit to decode a first slice of a first frame of the video, and

6   a second decoding to decode a second slice of a second frame of the video in

7   parallel with said first decoding unit decoding the first slice of the first

8   frame of the video, at least in part.

1   27.   The system of claim 26 wherein said first decoding unit of the video renderer is

2   equipped to

3   determine whether the first slice has any decoding dependency on having one or

4   more other slices decoded first,

5   further determine whether the one or more other slices on which decoding of the

6   first slice depends have been decoded, if the first slice is determined to be dependent

7   on having one or more other slices decoded first; and

8   temporarily suspend decoding the first slice if the first slice is determined to be

9   dependent on having one or more other slices decoded first, and at least one of the one

10   or more other slices has not been decoded.

1   28.   The system of claim 27, wherein said first decoding unit of the video renderer is

2   further equipped to decode the first slice when all of said one or more other slices on

3   which decoding of the first slice depends, have been decoded.

1   29.   The system of claim 27, wherein said first decoding unit of the video renderer is

2   further equipped to decode the first slice on determining that the first slice has no

3   decoding dependency.